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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/677,941

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Jae-Hyuk Eoh

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EXAMINER

PALABRICA, RICARDO J

ART UNIT

PAPER NUMBER

3663

MAIL DATE

DELIVERY MODE

06/06/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/677,941

Applicant(s)

EOH ET AL.

Examiner

Rick Palabrica

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 May 2007 and 17 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4, and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submissions filed on 5/4/07 and 8/17/06, which directly amended claim 1, canceled claims 3, and 5-8, and traversed the rejection of claims in the 3/2/06 Office action, has been entered.

Response to Arguments

2. Applicant argues that applied art, Hundal et al., do not teach or disclose the claimed limitations of: a) "no contact between the sodium and the heat exchanger"; and b) "the technical feature of adjusting the surface emissivity of the sodium-sodium heat exchanger." The examiner disagrees.

As to argument a), to support his allegation, applicant cites the following passage in Hundal et al. (see page 6, Remarks/Arguments, of the 8/1706 submission):

"while it would be possible to design the redan 76 so that the level 112 of the liquid sodium within the annular space 93 made no contact whatever with the lower pipes 74 of the heat exchanger 72, some minimal contact is preferred in order to keep the liquid metal within the pipes 74 liquid at all times so that there is always at least some circulation of coolant moving through the heat exchanger 72. Such minimal contact is not enough to significantly affect the efficiency of the reactor facility 1 as a whole, but yet will insure that the system 70 will respond rapidly to a shut-down condition, since the coolant will never have a chance to solidify in the pipes 74". Underlining provided. See col. 8, lines 51-63.

It is clear that Hundal et al. prefer some minimal contact between the lower pipes of the heat exchanger and liquid sodium. However, they also state unequivocally that their apparatus will function where there is NO CONTACT between said two elements! Thus, the NO CONTACT configuration may not be their preferred embodiment but they also do not preclude said configuration. Thus, Hundal et al. meet the claim limitation, as per MPEP 2123 (Rejection Over Prior Art's Broad Disclosure Instead of Preferred Embodiments), which states:

"I. PATENTS ARE RELEVANT AS PRIOR ART FOR ALL THEY CONTAIN

A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). See also Celeritas Technologies Ltd. v. Rockwell International Corp., 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998) (The court held that the prior art anticipated the claims even though it taught away from the claimed invention. "The fact that a modem with a single carrier data signal is shown to be less than optimal does not vitiate the fact that it is disclosed.").

II. NONPREFERRED AND ALTERNATIVE EMBODIMENTS CONSTITUTE PRIOR ART

Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments. In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971). '[t]he prior art's mere disclosure of more than one alternative does not constitute a teaching away from any of these alternatives because such disclosure does not criticize, discredit, or otherwise discourage the solution claimed..' In re Fulton, 391 F.3d 1195, 1201, 73 USPQ2d 1141, 1146 (Fed. Cir. 2004)."

As to argument b), applicant's claims are directed to an apparatus and NOT to a process. The cited limitation, i.e.,

"wherein the heat transfer by thermal radiation is quantitatively controlled by adjusting surface emissivity of the sodium-sodium heat exchanger and the circular vertical tube to minimize heat loss under normal steady-state conditions",

is a process limitation and not a structural imitation of the claimed apparatus. The recited limitation occurs when the apparatus is used during operation (i.e., a process). The limitation is NOT a structural element that is present when the apparatus is initially taken "off-the-shelf" or "removed from the box."

Thus, said wherein clause, as well as other statements of intended use do not serve to patently distinguish the claimed structure over that of the reference, as long as the structure of the cited references is capable of performing the intended use. See MPEP 2111-2115.

See also MPEP 2114 that states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531.

[A]pparatus claims cover what a device is, not what a device does." *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528.

As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Any one of the systems in the cited references in the previous Office action is capable of being used in the same manner and for the intended or desired use as the claimed invention. Note that it is sufficient to show that said capability exists, which is the case for the cited references.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Hundal et al.

The reasons are the same as those stated in section 5 of the 3/2/06 Office action, as further clarified in section 2 above, which reasons are herein incorporated..

Note that claim 1 is the combination of the old claims 1, 3 and 5. These old claims have been previously rejected in said section of the 3/2/06 Office action. Claims 2 and 4 have also been previously rejected in said section of the 3/2/06 Office action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 2, 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jogand in view of Hundal et al.

The reasons are the same as those stated in section 7 of the 3/2/06 Office action, as further clarified in section 2 above, which reasons are herein incorporated.

Note that claim 1 is the combination of the old claims 1, 3 and 5. These old claims have been previously rejected in said section of the 3/2/06 Office action. Claims 2 and 4 have also been previously rejected in said section of the 3/2/06 Office action.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jogand in view of Hundal et al.

The reasons are the same as those stated in section 9 of the 3/2/06 Office action, as further clarified in section 2 above, which reasons are herein incorporated.

Note that claim 9 depend from claim 1, which is rejected by the same combination in section 4 above.

Conclusion

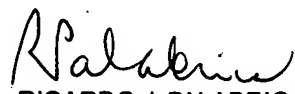
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 571-272-6880. The examiner can normally be reached on 6:00-4:30, Mon-Thurs.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3663

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RJP
May 29, 2007


RICARDO J. PALABRICA
PRIMARY EXAMINER